

Dr. LASNE Yannick, Pierre-Henri
Date of birth: July 06, 1977
Citizenship: French
Single
Full Clean Current Driving Licence

Address: 280 E Del Mar Blvd,
Pasadena, CA, 91101, USA.
+1 (818)-354-4253
+33 (0)6-89-98-11-52
ylasne@jpl.nasa.gov

DOCTOR IN RADAR REMOTE SENSING & PLANETOLOGY

PROFESSIONAL REFERENCES

- 2009-** **Member of the Ventures Science Team** at the Jet Propulsion Laboratory / California Institute of Technology (JPL/CalTech) for complement project to NASA's SMAP mission dedicated to a P-band airborne SAR campaign targeted at understanding sub-canopy and root zone soil moisture. Project originated by Prof. M. Moghaddam (University of Michigan, Ann Harbor), Pasadena, CA, USA.
- 2008-** **NASA Post-Doctoral Position** at the Jet Propulsion Laboratory / California Institute of Technology (JPL/CalTech) as part of the NASA Post-Doctoral Program operated by the Oak Ridge Associated Universities under a contract to the National Aeronautics & Space Administration (NASA), Pasadena, CA, USA.
- 2008-** **Reviewer** for the IEEE Transaction on Geosciences and Remote Sensing Editorial Board.
- 2007-2008** **Post-Doctoral Position** at the TETIS UMR, Remote Sensing Centre, Montpellier (34), France.
- 2006-2007** **Post-Doctoral Position** at the Laboratory of Physics of Wave-Matter Interactions (PIOM) of the Bordeaux National School of Chemistry and Physics (ENSCPB), University of Bordeaux 1, Pessac (33), France.
- 2005-2006** **Post-Doctoral Position** in the POL-InSAR Group (Polarimetric Interferometry SAR), German Space Center (DLR) – Oberpfaffenhöfen (Germany).
- 2005** **Doctor's degree of the University of TOULOUSE III** – Mention Remote Sensing and Planetology. Doctorate performed at the Aquitaine Observatory of Universe Sciences (OASU), Laboratory of Astrophysics, Astrodynamics, and Aeronomy of Bordeaux (L3AB – UMR 5804), Floirac (33).
- 2004-2005** **Supervisor** of students' training for Master's degree in Physics/Astrophysics at the Astronomical Observatory of Bordeaux (OASU-L3AB), Floirac (33), France.
- 2003-2005** **Student Representative** at the OASU/L3AB Laboratory Council, Floirac (33), France.
- 2003-2005** **Astronomy Teacher Assistant** at the University of Bordeaux 1, DEUG Cycle, Talence (33), France.
- 2003-2005** **Astronomy Teacher Assistant and Astronomical Observations Supervisor** at UTLA, Astronomical Observatory of Bordeaux (OASU-L3AB), Floirac (33).

RESEARCH INTERESTS

 Radar Remote Sensing for planetary science

- ↳ Monitoring Surface and Shallow Subsurface Martian Hydrology
- ↳ Terrestrial & Martian Geology.
- ↳ Electromagnetic Characterization of Geological Materials
- ↳ Desertification and Hyper-saline Environments

EDUCATION

- 2002-2005** **Ph.D.** in Remote Sensing and Planetology, University Paul Sabatier, Toulouse III, France. Performed at the Aquitaine Observatory of Universe (OASU), Laboratory of Astrophysics, Astrodynamics, and Aeronomy of Bordeaux (L3AB – UMR 5804), Floirac, (defended on September 26th, 2005, *Summa Cum Laude*).
Honors: Summa Cum Laude
« Low Frequency Radar Imagery for the Exploration of Terrestrial and Martian Arid Areas: Subsurface Moisture Detection and Cartography of the Paleohydrology. »
- 2002** **DEA's Degree** (pre-doctorate diploma / *All But Dissertation*) in Astrophysics, Planetology, Space Sciences & Techniques, University Paul Sabatier, Toulouse III (31), France.
Honors: Cum Laude.
- 2001** **Master's Degree** in Theoretical Physics Physique, University of Bordeaux I, Talence (33), France.
Honors: Cum Laude.

Projects

Terrestrial Analogs to Mars

SMAP Mission.

Selected Awards

- 2007-2010** **NASA Post-doctoral Fellowship (ORAU)**, Jet Propulsion Laboratory (JPL/Caltech), Pasadena, CA, USA.
- 2007** **CNES Post-doctoral Fellowship**, French Space Center, France.
- 2005** **DLR Postdoctoral Fellowship**, German Space Center, Munich, Germany.
- 2002-2005** **Doctoral Financial Support (MENRT)**, University Paul Sabatier Toulouse III, SDU2E Doctoral School.

PUBLICATIONS LIST

Referred Papers in Academic Journals (7):

↳ « Study of hyper-saline deposits and analysis of their signature in airborne and spaceborne SAR data: Example of Death Valley, California », Y. Lasne, P. Paillou, A.

Freeman, T. Farr, K. McDonald, G. Ruffié, J.-M. Malézieux, and B. Chapman, IEEE Transactions on Geoscience and Remote Sensing, *accepted for publication in IEEE TGRS 2009*.

↳ « **Effect of salinity on the dielectric properties of geological materials : Implication for soil moisture detection by means of remote sensing** », Y. Lasne, Ph. Paillou, G. Ruffié, K. McDonald, A. Freeman, T. Farr, J.-M. Malézieux, and B. Chapman, IEEE Transactions on Geoscience and Remote Sensing, Vol. **46**, pp. 1674-1688, 2008.

↳ « **Study of P-Band SAR performances for Mars exploration: Imaging subsurface geology and detecting shallow moisture** », P. Paillou, Y. Lasne, E. Heggy, J.-M. Malézieux, and G. Ruffié, J. Geophys. Res. Planets, Vol **111**, No E6, E06S11, April 2006.

↳ « **Surface and subsurface structures mapping using low frequency radar. A synthesis of the Mauritanian and Egyptian experiments** », G. Grandjean, Ph. Paillou, N. Bahgadji, E. Heggy, T. August, Y. Lasne, , Journal of African Earth Sciences on Remote Sensing Applications in Geology, Vol. **44**, pp 220-228, 2006.

↳ « **The contribution of radar satellite imagery to geological exploration in arid areas** », N. Baghdadi, G. Grandjean, D. Lahondère, Ph. Paillou, Y. Lasne, C.R. Acad. Sci. Paris, Geoscience, vol. 337, pp 719-728, 2005.

↳ « **Effect of multiple scattering on the phase signature of wet subsurface structures: Applications to polarimetric L and C-band SAR** », Y. Lasne, Ph. Paillou, G. Ruffié, M. Crapeau, IEEE Transactions on Geoscience and Remote Sensing, Vol. 43, No. 8, pp 1716-1726, 2005.

↳ « **A phase signature for detecting subsurface wet structures using polarimetric L-band SAR data** », Y. Lasne, Ph. Paillou, Th. August-Bernex, G. Ruffié, G. Grandjean, IEEE Transactions on Geoscience and Remote Sensing, vol. 42, no. 8, pp. 1683-1694, 2004.

Referred Conference and Workshop Papers (14):

↳ « **SAR Imagery Applied to the Monitoring of Hyper-Saline Deposits: Death Valley Example (CA)** », Y. Lasne, Ph. Paillou, A. Freeman, and B. Chapman, IEEE Radar Conference, Pasadena, California, USA, May 4-8, 2009.

- ↳ «**Monitoring the Dynamics of Hyper-Saline Environments with Polarimetric SAR: Death Valley, California Example**», Y. Lasne, K. McDonald, Ph. Paillou, A. Freeman, B. Chapman, T. Farr, G. Ruffié, J.-M. Malézieux, AGU 2008 Fall Meeting, San Francisco, California, USA, December 15-19, 2008.
- ↳ «**Along Track Interferometry on Rhone River**», J.-F. Nouvel, P. Dubois-Fernandez, P. Kosuth, and Y. Lasne, IGARSS 2008, Boston, Massachusetts, USA, July 6-11, 2008.
- ↳ «**Phase differences in longer wavelength polarimetric SAR – surface or subsurface effects?**», T. Freeman, Ph. Paillou, Y. Lasne, B. Campbell, K. McDonald, T. Farr, IGARSS 2008, Boston, Massachusetts, USA, July 6-11, 2008.
- ↳ «**Scattering from Salt Pans**», T. Freeman, T. Farr, K. McDonald, Y. Lasne, Ph. Paillou, B. Chapman, ASAR 2007, Vancouver, Canada, September 2007.
- ↳ «**Modeling Surface and Subsurface Scattering from Saline Soils**», T. Freeman, T. Farr, Ph. Paillou, Y. Lasne, B. Campbell, PollInSAR 2007, 2007.
- ↳ «**Effect of salinity on the dielectric properties of geological materials: Implication for soil moisture detection by means of remote sensing**», Y. Lasne, Ph. Paillou, J.-M. Malézieux, A. Freeman, T. Farr, G. Ruffié, IGARSS 2007, Barcelona, July 2007.
- ↳ «**Mapping Subsurface Geology in Arid Africa using L-Band SAR**», Ph. Paillou, S. Lopez, Y. Lasne, A. Rosenqvist, T. Farr, IGARSS 2007, Barcelona, July 2007.
- ↳ «**Salinity impact on the dielectric properties of geological materials: implication for soil moisture detection by means of radar remote sensing: terrestrial and Martian cases**», Y. Lasne, Ph. Paillou, G. Ruffié, C. Serradilla, F. Demontoux, J.-M. Malézieux, XVth National Microwaves Journeys, Toulouse, May 2007.
- ↳ «**Application of IEM (Integral Equation Model) to the phasimetric analysis of the backscattering coefficient applying to the wet subsurface structure detection in arid regions**», Y. Lasne, F. Koudogbo, P. Combes, Ph. Paillou, H. J. Mametsa, GDR Journeys on Scattering of Rough Surfaces, Paris, March 2006.
- ↳ «**A phase signature for detecting wet structures in the shallow subsurface of Mars using polarimetric P-band SAR**», Y. Lasne, Ph. Paillou, J.-M. Malézieux, G. Ruffié, Workshop on Radar Investigations of Planetary and Terrestrial Environments, Houston, USA, February 2005.
- ↳ «**Simulation of P-band SAR performances for Mars exploration**», Ph. Paillou, Y. Lasne, J.-M. Malézieux, E. Heggy, Workshop on Radar Investigations of Planetary and Terrestrial Environments, Houston, USA, February 2005.

↳ « **Détection de structures géologiques par radar grande longueur d'onde. Exemples de validation en République de Djibouti, en Egypte et en Mauritanie** », G. Grandjean, Ph. Paillou, N. Baghdadi, E. Heggy, Th. August, Y. Lasne, 20th Colloquium on African Geology, Orléans, France, June 2004.

↳ « **A phase signature for detecting subsurface moisture using polarimetric L-band SAR data: example of the Pyla dune - France** », Y. Lasne, Ph. Paillou, Th. August-Bernex, G. Ruffié, G. Grandjean, E. Heggy, IGARSS'03, Toulouse, France, July 2003.

Other communications and presentations (3):

↳ « **WP-2: Subsurface moisture mapping using polarimetric SAR** », Y. Lasne, Ph. Paillou, ESA Project, Bordeaux, September 2005.

↳ « **Modeling of multiple scattering and copolar phase difference for detecting wet buried structures with polarimetric SAR** », Y. Lasne, Ph. Paillou, DLR, Munich, Germany, June 2005.

↳ « **Exploring subsurface geology using radar techniques: modeling, experiments and consequences for Mars exploration (Poster, session PNP)** », Ph. Paillou, Y. Lasne, G. Grandjean, E. Heggy, T. Farr, SF2A, Paris, June 2004.

PROPOSALS (6)

NASA/JPL Proposals (3):

↳ « **Cryogenic Dielectric Property Measurements at Microwave Frequencies Relevant to Interpreting Radar Echoes Obtained from Icy Satellites and Earth Observation Missions** », P.I. M. Barmatz, Co-I's: Ph. Paillou, S. Ostro, Y. Lasne, J. Castillo, and C. Sotin, *DRDF Concept Paper FY 2009*.

↳ « **Cryogenic Dielectric Property Measurements at Microwave Frequencies Relevant to Interpreting Radar Echoes Obtained from Icy Satellites and Earth Observation Missions** », P.I. M. Barmatz, Co-I's: Ph. Paillou, S. Ostro, Y. Lasne, and J. Castillo, *Innovative Spontaneous Concept Proposal*, 2008.

↳ « **Implementation of a Network between Ice Research Specialist at JPL** », P.I. J. Castillo, Co-I's: A. Lane, Y. Lasne, A. El Khazendar, and R. Shope, *Innovative Spontaneous Concept Proposal*, 2008.

CNRS Proposal (1):

↳ « **RADARSALT: Microwave Characterization of Arid and Salted Deposits** », P.I. G. Ruffié, Co-I's: Ph. Paillou, Y. Lasne, F. Bonnaudin, CNRS PEPS Project, 2009.

IGARSS 2009: Invited Session Proposal (1):

↳ « **Remote Sensing for the Monitoring of Hyper-Saline Environments and Vegetation Chemistry** », P.I. Y. Lasne, Co-I: K. McDonald, *IGARSS 2009 Conference*, Cape Town, South Africa, 2009.

ESA Report (1):

↳ « **WP-2: Subsurface moisture mapping using polarimetric SAR** », Y. Lasne, Ph. Paillou, Work Packages 2-1, 2-2, 2-3, ESTEC Contract No 18501/04/NL/CB, 52p, 2005.

